

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)
)
Spectrum Policy:)
)
Solicitation of Public Comment) ET Docket No. 02-135
by the Spectrum Policy Task Force)
)
)
)
To: The Commission)

**COMMENTS OF
Statewide Wireless Network
New York State Office for Technology
6C Executive Park Dr.
Albany, NY 12203-3716**

July 8, 2002

Appendix 2

Annex B of the PSWAC Operational Requirements
Subcommittee Final Report
pp. 82 (156) - 112 (186)

[This Annex, as published - 9/11/96, only included data in Sections B-1-A and B-2-A.]

ANNEX B - SPECTRUM CALCULATION INPUT DATA BASED UPON USER NEEDS

The purpose of this section is to describe the method used to develop the public safety input data projections for the year 2010 to be used in the calculation of spectrum need. These parameters are:

- 1) Population - the number of people in the various agencies, listed by general category of Police, Fire, EMS and General Government. It should be noted that in some jurisdictions, Fire and EMS have become merged into a single agency function. In the equation for calculating spectrum need, this parameter is abbreviated as POP. The material describing population is found in section B-1.
- 2) Penetration - the percentage of the identified population that will use a particular type of radio communication. In the equation for calculating spectrum need, this parameter is abbreviated as PEN. The material describing penetration is found in section B-2.

The following sections will provide information for the New York and Los Angeles Metropolitan Areas as follows:

- B-1-A Population Data for state and local Governmental entities in the 31 county, New York Metropolitan Area - FCC Public Safety Region 8.
- B-1-B Population Data for federal government agencies in the 31 county, New York Metropolitan Area - FCC Public Safety Region 8.
- B-1-C Population Data for state and local governmental entities in the 5 county, Los Angeles Metropolitan Area.
- B-1-D Population Data for federal government agencies in the 5 county, Los Angeles Metropolitan Area.
- B-2-A Penetration Data for state and local governmental entities in the 31 county, New York Metropolitan Area - FCC Public Safety Region 8.
- B-2-B Penetration Data for federal government agencies in the 31 county, New York Metropolitan Area - FCC Public Safety Region 8.
- B-2-C Penetration Data for state and local governmental entities in the 5 county, Los Angeles Metropolitan Area.
- B-2-D Penetration Data for federal government agencies in the 5 county, Los Angeles Metropolitan Area.

B-2-E Aggregate Penetration Data, derived for each category of communication service offering from the sum of the preceding four spreadsheet penetrated population sums divided by the sum of the two area total populations.

The data from these sections are summarized as follows:

1. New York Metropolitan Area - State and Local Government:

SUMMARY PENETRATION AND POPULATION DATA:

AREA	VOICE DISPATCH	VOICE INTERCON	TRANSACT PROCES'G	FACSIMILE	SNAP SHOT	REM FILE ACCESS	SLO SCN VIDEO	FULL MO VIDEO	2010 POPULATION BY CATEGORY	% USER CATEGORY POPULATION OF TOTAL REGION 8 POPULATION
POLICE	53.12%	11.58%	31.25%	6.71%	28.79%	23.34%	1.87%	12.24%	83,229	0.39%
FIRE	39.62%	11.29%	31.48%	10.53%	16.83%	28.12%	1.04%	19.54%	153,321	0.73%
EMS	35.67%	11.34%	34.20%	14.13%	30.99%	30.99%	13.60%	3.52%	51,909	0.25%
GENERAL GOV'T SERVICES	20.69%	1.29%	16.16%		0.71%	0.91%	2.54%	0.59%	251,138	1.19%
TOTAL REGION 8 AREA POPULATION =									21,099,700	

2. New York Metropolitan Area - Federal Government:

SUMMARY PENETRATION AND POPULATION DATA:

AREA	VOICE DISPATCH	VOICE INTERCON	TRANSACT PROCES'G	FACSIMILE	SNAP SHOT	REM FILE ACCESS	SLO SCN VIDEO	FULL MO VIDEO	2010 POPULATION BY CATEGORY	% USER CATEGORY POPULATION OF TOTAL REGION 8 POPULATION
POLICE										
FIRE										
EMS										
GENERAL GOV'T SERVICES										
TOTAL REGION 8 AREA POPULATION =									21,099,700	

3. Los Angeles Metropolitan Area - State and Local Government:

SUMMARY PENETRATION AND POPULATION DATA:

AREA	VOICE DISPATCH	VOICE INTERCON	TRANSACT PROCES'G	FACSIMILE	SNAP SHOT	REM FILE ACCESS	SLO SCN VIDEO	FULL MO VIDEO	2010 POPULATION BY CATEGORY	% USER CATEGORY POPULATION OF TOTAL LOS ANGELES POPULATION
POLICE										
FIRE										
EMS										
GENERAL GOV'T SERVICES										
TOTAL LOS ANGELES AREA POPULATION =										

4. Los Angeles Metropolitan Area - Federal Government:

SUMMARY PENETRATION AND POPULATION DATA:

AREA	VOICE DISPATCH	VOICE INTERCON	TRANSACT PROCES'G	FACSIMILE	SNAP SHOT	REM FILE ACCESS	SLO SCN VIDEO	FULL MO VIDEO	2010 POPULATION BY CATEGORY	% USER CATEGORY POPULATION OF TOTAL LOS ANGELES POPULATION
POLICE										
FIRE										
EMS										
GENERAL GOV'T SERVICES										
TOTAL LOS ANGELES AREA POPULATION =										

5. Aggregate Penetration:

ALL SERVICES	VOICE DISPATCH	VOICE INTERCON	TRANSACT PROCES'G	FACSIMILE	SNAP SHOT	REM FILE ACCESS	SLO SCN VIDEO	FULL MO VIDEO

PSWAC Operational Requirements - Appendix B-1-A

New York Metropolitan Area Operational Needs Report On Population (POP)

The purpose of this section is to describe the method used to develop the state and local public safety population projection for the year 2010. This parameter, population, is a required input to the future needs equation being solved by the overall PSWAC process. Population has been given the abbreviation POP.

The population determined in this section **does NOT include any values for the federal government** needs within the boundaries of the New York Metropolitan Area, or the needs for interoperability in the region. These needs, must be added to the population determined in this document in order to arrive at the total population for the New York Metropolitan Area.

I. DEFINITION OF NEW YORK METRO AREA

The New York Metropolitan Area is defined as the 31 counties of Connecticut, New York, and New Jersey which make up NPSPAC Region 8. NPSPAC Region 8 is the New York Metropolitan Area per FCC Docket PR 87-112 which allocated six MHz of spectrum, 821-824 and 866-869 MHz, for public safety use. It is appropriate to use that same area here to define the New York Metropolitan Area. Table 1 lists the 31 counties of NPSPAC Region 8 with the 1990 population of each county.

State	County	Population, 1990 ¹
CT	Fairfield	827,645
CT	Litchfield	174,092
CT	Middlesex	143,196
CT	New Haven	804,219
NJ	Bergen	825,380
NJ	Essex	778,206
NJ	Hudson	553,099
NJ	Hunterdon	107,776
NJ	Mercer	325,824
NJ	Middlesex	671,780
NJ	Monmouth	553,124
NJ	Morris	421,353
NJ	Passaic	453,060

State	County	Population, 1990¹
NJ	Somerset	240,279
NJ	Sussex	130,943
NJ	Union	493,819
NJ	Warren	91,607
NY	Dutchess	259,462
NY	Nassau	1,287,348
NY	Orange	307,647
NY	Putnam	83,941
NY	Rockland	265,475
NY	Suffolk	1,321,864
NY	Sullivan	69,277
NY	Ulster	165,304
NY	Westchester	874,866
NYC	Bronx	1,203,789
NYC	Kings	2,300,664
NYC	New York	1,487,536
NYC	Queens	1,951,598
NYC	Richmond	348,977
Total =		19,523,150

TABLE 1 - NPSPAC Region 8

The metro region was studied in two distinctly different ways. First, the 26 counties outside of New York City proper were studied by interviewing key people and collecting data regarding population, population density, personnel reports and the like. New York City, on the other hand, was broken down into the various agencies within city government and their populations. The sum of the two parts was the overall population, POP, for the New York Metropolitan Area.

II. OVERALL POPULATION

The first item to be determined was a forecast of the overall population of the region in the year 2010. A chart² was found which listed 30 of the 31 counties with population projections, by county, every five years out to the year 2020. The missing county was Middlesex county in Connecticut.

The values for the year 2010 were used in the following work. A projection for Middlesex county, CT was calculated using a growth similar to the other counties of Connecticut. The overall population of the region was forecast at 21,099,700 for the year 2010.

The next task was to search for a relationship between the total population and the number of public safety personnel. The following sections describe the findings.

III. POLICE OFFICER POPULATION

Each of the states annually publishes a crime report. Copies of the 1993 reports were obtained for New York³ and New Jersey⁴. Contained within these reports are tables listing the number of police employees by town, county, etc. By using the number of sworn municipal and county police officers in each county and dividing by the population, a rate of police officers as a percent of overall population was determined.

Reference 1 contained population and land area statistics for each county. From these data the population density was calculated in population per square mile.

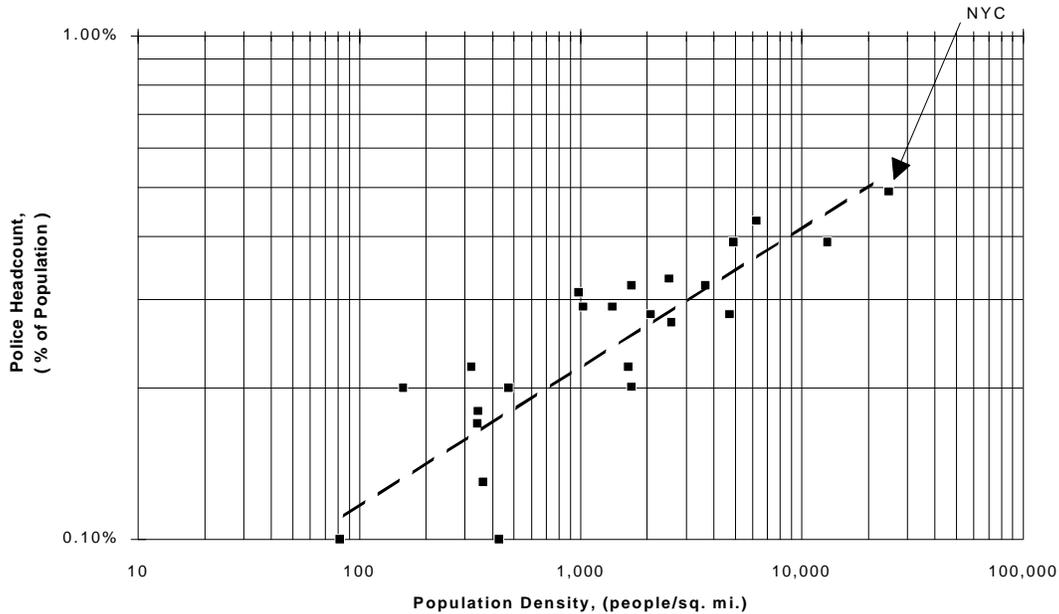


Figure 1 - Sworn Police Officer Rate vs. Population Density

Figure 1 shows that the rate of sworn police officers for a given area is directly proportional to the population density. New York City has 0.49% police at a population density of over 24,000 people/sq. mi, while Sullivan county has 0.1% police at a population density of 81 people/sq. mi. Values were then selected for the four counties of Connecticut by drawing a line through the data. The resulting values for Connecticut were in very close agreement with those received from the police frequency coordinator for the state.

Since the data above for New York and New Jersey did not include State Police functions of various kinds, a portion of the overall state police headcount was added, for New Jersey - based upon the percentage of the state geography included within NPSPAC Region 8 or 50.7% of the state, and for New York - based upon the distribution of personnel assigned within those NYS counties in Region 8.

The sworn police officer population projections for NPSPAC Region 8 are shown in exhibit 2 attached in column I. The grand total of sworn police officers is about 83,000.

IV. FIRE FIGHTER POPULATION

Outside of the City of New York the fire fighting community is made up largely of volunteer fire companies. The population values for fire fighters was determined in three ways. First, interviews were conducted in Bergen, Rockland, Westchester and Suffolk counties during which the number of volunteers and paid personnel were estimated for the entire county. Second, for Nassau county the county *Fire and EMS Data Book*⁵ was used to sum the personnel for the entire county. Third, for the city of New York the *1994-95 Green Book*⁶ listed the Fire Department at 12,421 personnel. In each of these six instances the current headcount was calculated as a percent of the current population. Then, this percentage was applied to the projected 2010 overall population in order to arrive at the projected population in 2010. Figure 2 is a plot of the data for these six instances.

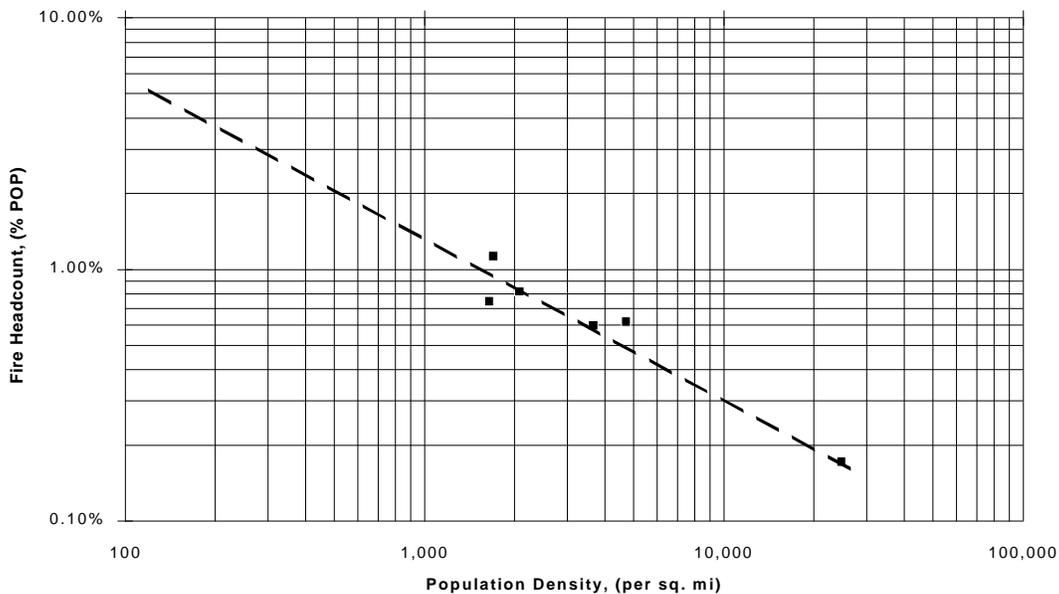


Figure 2 - Fire Fighter Rate vs. Population Density

Note that the slope of the line through these data is the opposite of the data for police. This is because in the case of fire fighters the more rural an area is, the more volunteer fire fighters there are (as a % of population). New York City, with 24,000 people per square mile has a fire fighter rate of 0.17% of population, while Rockland county has 1,700 people per square mile and 1.13% of population as fire fighters. A line was drawn through these six data points, and fire rates were determined for the other counties in that matter. Once the fire rate was established, it was applied to the 2010 population projection in order to determine the number of fire fighters in the year 2010.

The number of fire fighters projected in the year 2010 is shown in exhibit 2 attached at column K. The total for NPSPAC Region 8 is about 153,000.

V. EMERGENCY MEDICAL POPULATION

Emergency medical population was determined in the same manner as fire fighters. That is, through a process of interviews with key people in each of several counties and the City of New York. The Nassau County *Fire and EMS Data Book*, reference 5, was a valuable source of data which was used to check the sanity of the values determined through the interviews. Figure 3 is the plot of the data for the six samples.

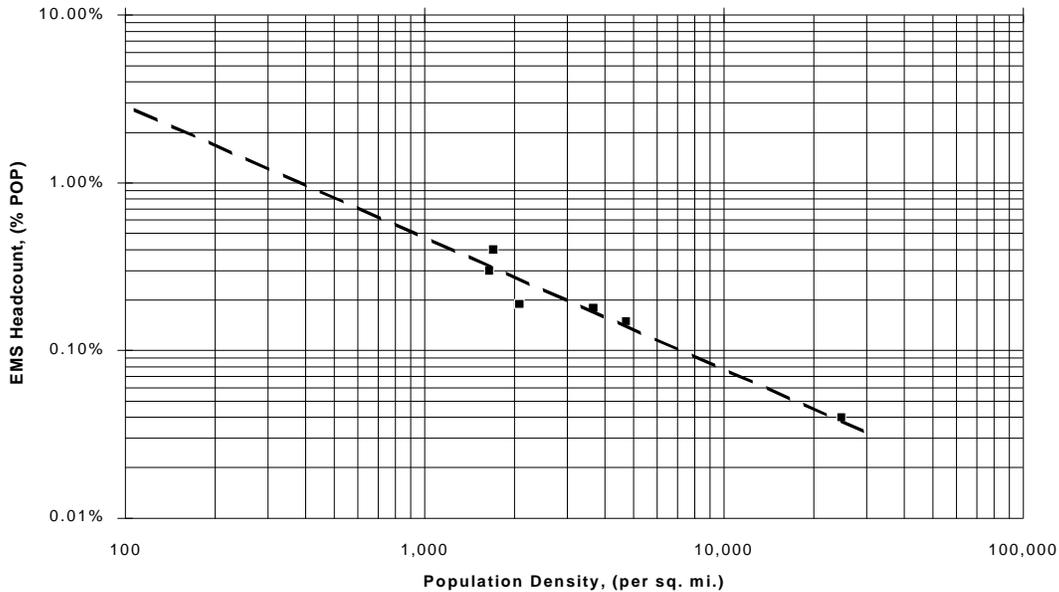


Figure 3 - EMS Headcount vs. Overall Population Density

The number of EMS personnel projected in the year 2010 is shown in exhibit 2 attached at column M. The total for NPSPAC Region 8 is about 52,000.

VI. GOVERNMENTAL SERVICES POPULATION

The police, fire, and emergency medical services populations within this report generally are considered the “first response” personnel within NPSPAC Region 8 and data on these services is more readily available than those of general (local) government, highway maintenance, forestry/conservation, public mass transportation, and correctional services.

These other governmental services have been combined for purposes of this report. The data presented for these services have been combined to simplify the presentation of the region’s requirements and not to diminish their respective importance.

The governmental service population values for 1995 for the counties **within the City of New York** are taken from the *1994-1995 Green Book*, reference 6. The various agencies of city government are listed with their staffing. The listing was studied and those agencies which are candidates for wireless communications were added to the attached exhibit 2 in column N. These 1995 values were summed and a growth rate applied to project the POP for the year 2010. The number of New York City governmental service employees (less the “first responders”) who are candidates for wireless communications is shown in attached exhibit 2 in column P at row 72. The total is about 149,000.

The governmental service population values for counties **outside of the City of New York** are calculated based on the following regional observations and relationships:

- The wireless needs of the general governmental users represents roughly half of the full-time employed “first response” personnel.
- Greater than 90% of the fire and emergency medical services are community based volunteer services.
- Regional Fire/EMS coordinators estimate that four volunteers in each of the respective services are equivalent to one full-time employee in that service.

Based on the above, the governmental services population rate for areas outside of the City of New York can be expressed as:

$$\text{government population rate} = 0.5 [\text{police rate} + 0.25(\text{fire rate} + \text{EMS rate})]$$

This empirical formula is applied for all counties within NPSPAC Region 8 outside of the City of New York. The margin of error of this formula may not be significant when compared to the number of employees of the City of New York.

The staffing levels for several of the other large government run agencies such as, NYC Transit Authority⁷, Metro North RR, Long Island RR, New Jersey Transit, and the Port Authority of NY and NJ, were added to exhibit 2 at rows 75 through 79.

The number of local government employees who are candidates for wireless communications are shown in attached exhibit 2 in column P. The grand total for Governmental Services is about 251,000.

VII. GRAND TOTAL

The grand total state and local public safety population for the New York Metropolitan Area was determined to be forecast in the year 2010 at 539,222.

For comparison purposes, the following attributes identify the New York Metropolitan Area.

- Includes portions of three (3) states
- Estimated area population in the year 2010 = 21,099,700
- Total land area = 12,369 square miles
- Average population density of the total area = 1,706 persons / square mile.

EXHIBIT 1 - POPULATION PROJECTIONS BY COUNTY (000)

NEW YORK METROPOLITAN TRANSPORTATION COUNCIL - 9/20/95

(PREPARED BY URBANOMICS - LAST REVISION 9/18/95)

	1970	1980	1990	1994	1995	2000	2005	2010	2015	2020
BRONX	1,471.7	1,169.0	1,203.8	1,191.3	1,192.6	1,203.8	1,223.4	1,240.3	1,260.0	1,289.8
KINGS	2,602.0	2,231.0	2,300.7	2,271.0	2,275.7	2,285.5	2,300.8	2,333.7	2,370.0	2,412.4
NEW YORK	1,539.2	1,428.3	1,487.5	1,506.4	1,510.0	1,520.4	1,540.8	1,556.7	1,565.2	1,575.0
QUEENS	1,986.5	1,891.3	1,951.6	1,964.3	1,970.3	1,999.0	2,029.4	2,062.4	2,124.0	2,189.2
RICHMOND	295.4	352.0	379.0	397.7	400.0	413.7	428.4	441.5	455.0	475.0
NEW YORK CITY	7,894.8	7,071.6	7,322.6	7,330.7	7,348.6	7,422.4	7,522.8	7,634.6	7,774.2	7,941.4
NASSAU	1,428.1	1,321.6	1,287.3	1,302.3	1,302.3	1,318.8	1,329.6	1,349.8	1,379.9	1,433.6
SUFFOLK	1,125.0	1,284.2	1,321.9	1,349.2	1,347.1	1,367.3	1,423.3	1,495.2	1,571.0	1,658.1
LONG ISLAND	2,553.0	2,605.8	2,609.2	2,651.5	2,549.4	2,686.1	2,752.9	2,845.0	2,950.9	3,091.7
DUTCHESS	222.3	245.1	259.5	261.5	259.8	263.6	278.4	289.9	301.1	315.6
ORANGE	221.7	259.6	307.6	320.5	319.5	336.9	361.5	384.7	407.1	431.5
PUTNAM	56.7	77.2	83.9	89.2	89.2	91.8	95.2	98.8	102.3	106.3
ROCKLAND	229.9	259.5	265.5	274.8	274.8	280.0	286.9	295.5	305.3	315.0
SULLIVAN	52.6	65.2	69.3	70.6	70.0	71.0	74.9	79.0	83.2	87.7
ULSTER	141.2	158.2	165.3	168.9	165.9	169.2	173.1	177.1	186.6	200.1
WESTCHESTER	894.1	866.6	874.9	888.8	885.6	891.0	892.9	897.7	900.0	905.0
MID-HUDSON	1,818.5	1,931.3	2,026.0	2,074.3	2,064.6	2,103.5	2,162.9	2,222.7	2,285.6	2,361.2
NEW YORK SUBURBS	4,371.5	4,537.1	4,635.2	4,725.8	4,714.2	4,789.6	4,915.8	5,067.7	5,236.5	5,452.9
NEW YORK METRO	12,266.3	11,608.7	11,957.8	12,056.5	12,062.8	12,212.0	12,438.6	12,702.3	13,010.7	13,394.3
BERGEN	898.0	845.4	825.4	842.4	846.9	847.6	851.2	857.3	858.9	859.2
ESSEX	930.0	851.3	778.2	765.4	770.1	777.8	782.2	782.4	779.9	779.7
HUDSON	609.3	557.0	553.1	552.4	556.0	567.9	588.1	612.5	638.4	652.1
HUNTERDON	69.7	87.4	107.8	115.2	117.9	127.3	136.8	146.4	158.0	165.6
MERCER	304.0	307.9	325.8	329.4	330.8	343.5	361.3	383.1	400.4	411.7
MIDDLESEX	583.3	595.9	671.8	692.9	701.5	729.6	763.9	797.5	838.8	889.6
MONMOUTH	459.4	503.2	553.1	578.5	586.6	601.6	633.1	656.6	680.1	703.6
MORRIS	383.5	407.6	421.4	438.5	445.5	460.4	460.4	460.5	465.2	475.2
OCEAN	208.5	346.0	433.2	456.5	466.5	508.5	559.9	606.9	653.9	703.5
PASSAIC	460.8	447.6	453.1	461.8	463.8	463.6	463.5	463.4	463.3	453.2
SOMERSET	198.4	203.1	240.3	260.7	267.7	288.7	292.0	312.3	348.6	371.1
SUSSEX	77.5	116.1	130.9	138.3	140.6	149.7	157.6	167.2	178.1	185.2
UNION	543.1	504.1	493.8	496.2	499.0	502.0	502.5	503.8	515.5	523.1
WARREN	73.9	84.4	91.6	95.4	96.7	106.3	115.0	122.9	131.2	140.8
NEW JERSEY	5,799.7	5,857.0	6,079.5	6,223.6	6,289.6	6,474.5	6,667.5	6,872.8	7,108.3	7,323.6
FAIRFIELD	792.8	807.1	827.6	829.8	838.4	846.6	877.8	906.3	945.5	978.1
LITCHFIELD	144.1	156.8	174.1	178.5	181.0	190.6	200.4	211.6	223.2	241.0
NEW HAVEN	744.9	761.3	804.2	796.5	807.6	823.3	839.2	857.5	876.3	903.7
CONNECTICUT	1,681.9	1,725.2	1,806.0	1,804.8	1,827.0	1,860.5	1,917.4	1,975.4	2,045.0	2,122.8
REGION	19,747.9	19,190.9	19,843.2	20,084.9	20,179.4	20,547.0	21,023.5	21,550.5	22,164.0	22,840.7

EXHIBIT 2 DEMOGRAPHIC DATA

I/A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
2	State	County	1990 POP	2010 POP	Area, s.m.	2010 p/s/m	Police Rate	2010 POL	Fire Rate	2010 FIRE	EMS Rate	2010 EMS	1995 NYC	Rate	2010 GOV	
3	CT	Fairfield	827,645	906,300	626	1,448	0.30%	2,719	1.00%	9,063	0.35%	3,172		0.32%	2,889	
4	CT	Litchfield	174,092	211,600										0.32%	230	
											0.17%	360	3.30%	6,983	1.50%	
											3,174		0.69%	1,449		
5	CT	Middlesex	143,196	156,100	369	423	0.20%	312	2.20%	3,434	0.90%	1,405		0.49%	761	
6	CT	New Haven	804,219	857,500	606	1,415	0.30%	2,573	1.00%	8,575	0.32%	2,744		0.32%	2,701	
7																
8	NJ	Bergen	825,380	857,300	234	3,664	0.32%	2,743	0.58%	4,972	0.18%	1,543		0.26%	2,186	
9	NJ	Essex	778,206	782,400	126	6,210	0.43%	3,364	0.40%	3,130	0.11%	861		0.28%	2,181	
10	NJ	Hudson	553,099	612,500	47	13,032	0.39%	2,389	0.23%	1,409	0.06%	367		0.23%	1,416	
11	NJ	Hunterdon	107,776	146,400	430	340	0.17%	249	2.50%	3,660	1.10%	1,610		0.54%	783	
12	NJ	Mercer	325,824	383,100	226	1,695	0.32%	1,226	0.90%	3,448	0.30%	1,149		0.31%	1,188	
13	NJ	Middlesex	671,780	797,500	311	2,564	0.27%	2,153	0.70%	5,583	0.23%	1,834		0.25%	2,004	
14	NJ	Monmouth	553,124	656,600	472	1,391	0.29%	1,904	1.00%	6,566	0.25%	1,642		0.30%	1,978	
15	NJ	Morris	421,353	460,500	469	982	0.31%	1,428	1.30%	5,987	0.48%	2,210		0.38%	1,738	
16	NJ	Passaic	453,060	463,400	185	2,505	0.33%	1,529	0.70%	3,244	0.22%	1,019		0.28%	1,298	
17	NJ	Somerset	240,279	312,300	305	1,024	0.29%	906	1.30%	4,060	0.45%	1,405		0.36%	1,136	
18	NJ	Sussex	130,943	167,200	521	321	0.22%	368	2.70%	4,514	1.10%	1,839		0.59%	978	
19	NJ	Union	493,819	503,800	103	4,891	0.39%	1,965	0.47%	2,368	0.13%	655		0.27%	1,360	
20	NJ	Warren	91,607	122,900	358	343	0.18%	221	2.50%	3,073	1.00%	1,229		0.53%	648	
21	NJ	New Jersey State Police (50.7%)						1,467								
22	NJ	Dept of Corrections (50.7%)						3,147								
23	NJ	Other Police (50.7%)						363								
24																
25	NY	Dutchess	259,462	289,900	802	361	0.13%	377	2.50%	7,248	1.00%	2,899		0.50%	1,457	
26	NY	Nassau	1,287,348	1,349,800	287	4,703	0.28%	3,779	0.50%	6,749	0.13%	1,755		0.22%	2,953	
27	NY	Orange	307,647	384,700	816	471	0.20%	769	2.10%	8,079	0.85%	3,270		0.47%	1,803	
28	NY	Putnam	83,941	98,800	232	426	0.10%	99	2.20%	2,174	0.90%	889		0.44%	432	
29	NY	Rockland	265,475	295,500	174	1,698	0.20%	594	0.90%	2,660	0.30%	887		0.25%	740	
30	NY	Suffolk	1,321,864	1,495,200	911	1,641	0.22%	3,289	0.95%	14,204	0.30%	4,486		0.27%	3,981	
31	NY	Sullivan	69,277	79,000	970	81	0.10%	79	6.00%	4,740	3.00%	2,370		1.18%	928	
32	NY	Ulster	165,304	177,100	1,127	157	0.20%	354	4.00%	7,084	2.00%	3,542		0.85%	1,505	
33	NY	Westchester	874,866	897,700	433	2,073	0.28%	2,514	0.80%	7,182	0.10%	898		0.25%	2,267	
34	NY	NY State Police						877								
35	NY	Other PD's (Campus, Parks, etc)						250								
36																
37																
38																
39	NYC	Bronx	1,203,789	1,240,300	42	29,531										
40	NYC	Kings	2,300,664	2,333,700	71	32,869										
41	NYC	New York	1,487,536	1,556,700	28	55,596										
42	NYC	Queens	1,951,598	2,062,400	109	18,921										
43	NYC	Richmond	348,977	441,500	59	7,483										
44		AGENCY														
45		Aging, Dept for the												288		
46		Borough President (5 boros)												506		
47		Buildings, Dept of												605		
48	NYC	City Sheriff												452		
49		City University												3,587		
50		Consumer Affairs, Dept of												252		
51	NYC	Dept. of Corrections												12,342		
52	NYC	Bronx District Attorney												706		
53	NYC	Kings District Attorney												1,106		
54	NYC	New York DA												1,140		
55	NYC	Queens DA												561		
56	NYC	Richmond DA												96		
57	NYC	Board of Education												87,346		
58	NYC	DEP												6,029		
59	NYC	Dept of Health												2,600		
60		Housing, Pres & Dev, Dept of												3,557		
61	NYC	DOITT												318		
62		Investigation, Dept of												345		
63	NYC	Mayoralty												1,182		
64	NYC	Mental Health Svcs												268		
65	NYC	Prosecution-Special Narcotics												233		
66	NYC	Parks & Recreation												2,548		
67	NYC	Office of Probation												1,636		
68	NYC	Dept of Sanitation												8,832		
69	NYC	Taxi & Limousine Commission												463		
70	NYC	Dept of Transportation												6,125		
71	NYC	Youth Services, Dept of												145		
72	NYC	Total City	7,292,564	7,634,600	309	24,707	0.49%	37,562	0.17%	13,132	0.04%	3,054	141,869	1.95%	148,523	
73																
74																
75	NYC	NYCTransit Authority												46,000	0.64%	48,861
76		Metro North						200						5,300	0.07%	5,344
77		Port Authority of NY & NJ						700								
78		Long Island Railroad						250						1,950	?	1,950
79		New Jersey Transit						150						3,700	?	3,700
80		TOTAL	19,523,150	21,099,700	12,369	1,706		83,229		153,317		51,909			251,140	
81																
82																

GRAND TOTAL P.S. POP. IN 2010 595

PSWAC Operational Requirements - Appendix B-2-A
New York Metro Region Operational Needs
Report On Penetration (PEN)

This section is a companion to the section, Appendix B-1-A, state and local public safety population (POP) for the 31 county, New York Metropolitan Area - FCC Public Safety Region 8. In that section on population, the New York Metro Region was defined and population values were determined for each county in the region, the various agencies of New York City and certain state agencies.

Certain key agencies were interviewed to determine the percentage of the user category population (penetration) that would require a particular category of communication service offering. In order to complete this task in the time available, the other governmental entities in the study area were compared to the interviewed agencies for similar operational attributes and penetration data assigned accordingly.

This section on penetration, Appendix B-2-A, uses the population data projected for the year 2010 from Appendix B-1-A. Eight spreadsheet pages each list the data for one of the eight categories of communication service offerings. For each row in a worksheet, the four user categories of Police, Fire, EMS and General Government are listed. For each user category, the population is listed along with its penetration. The penetrated population (population x penetration) is then summed for each user category. This sum, divided by total population, yields the weighted penetration for that user category and communication service offering.

The eight categories of communication service offerings are:

1. Voice Dispatch
2. Voice Interconnect
3. Transaction Processing
4. Facsimile
5. Snapshot (visual image)
6. Remote File Access/Decision Processing
7. Slow Scan Video
8. Full Motion Video

These eight categories of communication service offerings agree with those defined in the PSWAC model for prediction of spectrum need.

The four categories of users are:

1. Police
2. Fire
3. Emergency Medical Service
4. General Government

The results are shown on the attached spreadsheets.

PENETRATION DATA - VOICE DISPATCH

	County/ Agency	POLICE 2010	VX DISP PEN %	PERSNL PEN	FIRE 2010	VX DISP PEN %	PERSNL PEN	EMS 2010	VX DISP PEN %	PERSNL PEN	GOV. SVCS 2010	VX DISP PEN %	PERSNL PEN %
CT	FAIRFIELD	2,719	50.00%	1,360	9,063	15.00%	1,359	3,172	20.00%	634	2,889		0
CT	LITCHFIELD	360	50.00%	180	6,983	50.00%	3,492	3,174	40.00%	1,270	1,449		0
CT	MIDDLESEX	312	50.00%	156	3,434	50.00%	1,717	1,405	40.00%	562	761		0
CT	NEW HAVEN	2,573	50.00%	1,287	8,575	15.00%	1,286	2,744	20.00%	549	2,701		0
NJ	BERGEN	2,743	40.00%	1,097	4,972	50.00%	2,486	1,543	40.00%	617	2,186	50.00%	1,093
NJ	ESSEX	3,364	50.00%	1,682	3,130	50.00%	1,565	861	50.00%	431	2,181		0
NJ	HUDSON	2,389	50.00%	1,195	1,409	50.00%	705	368	50.00%	184	1,416		0
NJ	HUNTERDON	249	50.00%	125	3,660	50.00%	1,830	1,610	40.00%	644	783		0
NJ	MERCER	1,226	50.00%	613	3,448	15.00%	517	1,149	20.00%	230	1,188		0
NJ	MIDDLESEX	2,153	40.00%	861	5,583	50.00%	2,792	1,834	40.00%	734	2,004	50.00%	1,002
NJ	MONMOUTH	1,904	40.00%	762	6,566	50.00%	3,283	1,642	40.00%	657	1,978	50.00%	989
NJ	MORRIS	1,428	40.00%	571	5,987	50.00%	2,994	2,210	40.00%	884	1,738	50.00%	869
NJ	PASSAIC	1,529	50.00%	765	3,244	50.00%	1,622	1,019	50.00%	510	1,298		0
NJ	SOMERSET	906	50.00%	453	4,060	50.00%	2,030	1,405	40.00%	562	1,136		0
NJ	SUSSEX	368	50.00%	184	4,514	50.00%	2,257	1,839	40.00%	736	978		0
NJ	UNION	1,965	50.00%	983	2,368	50.00%	1,184	655	50.00%	328	1,360		0
NJ	WARREN	221	50.00%	111	3,073	50.00%	1,537	1,229	40.00%	492	648		0
NJ	NJ STATE POLICE	1,467	50.00%	734									
NJ	NJ DEPT. CORRECT.	3,147	50.00%	1,574									
NJ	NJ OTHER POLICE	363	50.00%	182									
NY	DUTCHESS	377	50.00%	189	7,248	50.00%	3,624	2,899	40.00%	1,160	1,457		0
NY	NASSAU	3,779	50.00%	1,890	6,749	15.00%	1,012	1,755	20.00%	351	2,953		0
NY	ORANGE	769	50.00%	385	8,079	50.00%	4,040	3,270	40.00%	1,308	1,803		0
NY	PUTNAM	99	50.00%	50	2,174	50.00%	1,087	889	40.00%	356	432		0
NY	ROCKLAND	594	50.00%	297	2,660	50.00%	1,330	887	40.00%	355	740		0

	County/ Agency	POLICE 2010	VX DISP PEN %	PERSNL PEN	FIRE 2010	VX DISP PEN %	PERSNL PEN	EMS 2010	VX DISP PEN %	PERSNL PEN	GOV. SVCS 2010	VX DISP PEN %	PERSNL PEN %
NY	SUFFOLK	3,289	36.00%	1,184	14,204	15.00%	2,131	4,486	20.00%	897	3,981		0
NY	SULLIVAN	79	50.00%	40	4,740	50.00%	2,370	2,370	40.00%	948	928		0
NY	ULSTER	354	50.00%	177	7,084	50.00%	3,542	3,542	40.00%	1,417	1,505		0
NY	WESTCHESTER	2,514	50.00%	1,257	7,182	15.00%	1,077	898	20.00%	180	2,267		0
NY	NY STATE POLICE	877	40.00%	351									
NY	NY OTHER POLICE	250	50.00%	125									
NY	NEW YORK CITY	37,562	60.00%	22,537	13,132	60.00%	7,879	3,054	50.00%	1,527	148,523	15.00%	22,278
	BRONX												
	KINGS												
	NEW YORK												
	QUEENS												
	RICHMOND												
NY	METRO TRANSIT AUTH										48,861	43.00%	21,010
	METRO NORTH RR	200	50.00%	100							5,344	43.00%	2,298
	PORT AUTH NY NJ	700	80.00%	560									
	LONG ISLAND RR	250	50.00%	125							1,950	43.00%	839
	NJ TRANSIT	150	50.00%	75							3,700	43.00%	1,591
	TOTALS	83,229		44,210	153,321		60,746	51,909		18,519	251,138		51,969
	PENETR.BY CATEGORY	53.12%			39.62%			35.67%			20.69%		

PENETRATION DATE - VOICE INTERCONNECT

	County / Agency	POLICE 2010	VX INTRC PEN %	PERSNL PEN	FIRE 2010	VX INTRC PEN %	PERSNL PEN	EMS 2010	VX INTRC PEN %	PERSNL PEN	GOV SVCS 2010	VX INTRC PEN %	PERSNL PEN
CT	FAIRFIELD	2,719	20.00%	544	9,063	7.00%	634	3,172	20.00%	634	2,889		0
CT	LITCHFIELD	360	20.00%	72	6,983	20.00%	1,397	3,174	10.00%	317	1,449		0
CT	MIDDLESEX	312	20.00%	62	3,434	20.00%	687	1,405	10.00%	141	761		0
CT	NEW HAVEN	2,573	20.00%	515	8,575	7.00%	600	2,744	20.00%	549	2,701		0
NJ	BERGEN	2,743	0.00%	0	4,972	0.00%	0	1,543	0.00%	0	2,186		0
NJ	ESSEX	3,364	10.00%	336	3,130	10.00%	313	861	10.00%	86	2,181		0
NJ	HUDSON	2,389	10.00%	239	1,409	10.00%	141	368	10.00%	37	1,416		0
NJ	HUNTERDON	249	20.00%	50	3,660	20.00%	732	1,610	10.00%	161	783		0
NJ	MERCER	1,226	20.00%	245	3,448	7.00%	241	1,149	20.00%	230	1,188		0
NJ	MIDDLESEX	2,153	0.00%	0	5,583	0.00%	0	1,834	0.00%	0	2,004		0
NJ	MONMOUTH	1,904	0.00%	0	6,566	0.00%	0	1,642	0.00%	0	1,978		0
NJ	MORRIS	1,428	0.00%	0	5,987	0.00%	0	2,210	0.00%	0	1,738		0
NJ	PASSAIC	1,529	10.00%	153	3,244	10.00%	324	1,019	10.00%	102	1,298		0
NJ	SOMERSET	906	20.00%	181	4,060	20.00%	812	1,405	10.00%	141	1,136		0
NJ	SUSSEX	368	20.00%	74	4,514	20.00%	903	1,839	10.00%	184	978		0
NJ	UNION	1,965	10.00%	197	2,368	10.00%	237	655	10.00%	66	1,360		0
NJ	WARREN	221	20.00%	44	3,073	20.00%	615	1,229	10.00%	123	648		0
NJ	NJ STATE POLICE	1,467	20.00%	293			0			0			0
NJ	NJ DEPT. CORRECT.	3,147	20.00%	629			0			0			0
NJ	NJ OTHER POLICE	363	20.00%	73			0			0			0
NY	DUTCHESS	377	20.00%	75	7,248	20.00%	1,450	2,899	10.00%	290	1,457		0
NY	NASSAU	3,779	20.00%	756	6,749	7.00%	472	1,755	20.00%	351	2,953		0
NY	ORANGE	769	20.00%	154	8,079	20.00%	1,616	3,270	10.00%	327	1,803		0
NY	PUTNAM	99	20.00%	20	2,174	20.00%	435	889	10.00%	89	432		0
NY	ROCKLAND	594	20.00%	119	2,660	20.00%	532	887	10.00%	89	740		0
NY	SUFFOLK	3,289	5.00%	164	14,204	7.00%	994	4,486	20.00%	897	3,981		0

	County / Agency	POLICE 2010	VX INTRC PEN %	PERSNL PEN	FIRE 2010	VX INTRC PEN %	PERSNL PEN	EMS 2010	VX INTRC PEN %	PERSNL PEN	GOV SVCS 2010	VX INTRC PEN %	PERSNL PEN
NY	SULLIVAN	79	20.00%	16	4,740	20.00%	948	2,370	10.00%	237	928		0
NY	ULSTER	354	20.00%	71	7,084	20.00%	1,417	3,542	10.00%	354	1,505		0
NY	WEST-CHESTER	2,514	20.00%	503	7,182	7.00%	503	898	20.00%	180	2,267		0
NY	NY STATE POLICE	877	20.00%	175			0			0			0
NY	NY OTHER POLICE	250	20.00%	50			0			0			0
NY	NEW YORK CITY	37,562	10.00%	3,756	13,132	10.00%	1,313	3,054	10.00%	305	148,523	2.00%	2,970
	BRONX			0			0			0			0
	KINGS			0			0			0			0
	NEW YORK			0			0			0			0
	QUEENS			0			0			0			0
	RICHMOND			0			0			0			0
NY	METRO TRANSIT AUTH			0			0			0	48,861	0.43%	210
	METRO NORTH RR	200	0.43%	1			0			0	5,344	0.43%	23
	PORT AUTH NY NJ	700	10.00%	70			0			0			0
	LONG ISLAND RR	250	0.43%	1			0			0	1,950	0.43%	8
	NJ TRANSIT	150	0.43%	1			0			0	3,700	0.43%	16
	TOTALS	83,229		9,639	153,321		17,316	51,909		5,888	251,138		3,228
	PENETR. BY CATEGORY	11.58%			11.29%			11.34%			1.29%		

PENETRATION DATA - TRANSACTION PROCESSING

	County / Agency	POLICE 2010	TRNS/ PRC PEN %	PERSNL PEN	FIRE 2010	TRNS/ PRC PEN %	PERSNL PEN	EMS 2010	TRNS/ PRC PEN %	PERSNL PEN	GOV SVCS 2010	TRNS/ PRC PEN %	PERSNL PEN
CT	FAIRFIELD	2,719	50.00%	1,360	9,063	7.00%	634	3,172	20.00%	634	2,889		0
CT	LITCHFIELD	360	50.00%	180	6,983	50.00%	3,492	3,174	40.00%	1,270	1,449		0
CT	MIDDLESEX	312	50.00%	156	3,434	50.00%	1,717	1,405	40.00%	562	761		0
CT	NEW HAVEN	2,573	50.00%	1,287	8,575	7.00%	600	2,744	20.00%	549	2,701		0
NJ	BERGEN	2,743	40.00%	1,097	4,972	40.00%	1,989	1,543	40.00%	617	2,186	low	0
NJ	ESSEX	3,364	50.00%	1,682	3,130	50.00%	1,565	861	50.00%	431	2,181		0
NJ	HUDSON	2,389	50.00%	1,195	1,409	50.00%	705	368	50.00%	184	1,416		0
NJ	HUNTERDON	249	50.00%	125	3,660	50.00%	1,830	1,610	40.00%	644	783		0
NJ	MERCER	1,226	50.00%	613	3,448	7.00%	241	1,149	20.00%	230	1,188		0
NJ	MIDDLESEX	2,153	40.00%	861	5,583	40.00%	2,233	1,834	40.00%	734	2,004	low	0
NJ	MONMOUTH	1,904	40.00%	762	6,566	40.00%	2,626	1,642	40.00%	657	1,978	low	0
NJ	MORRIS	1,428	40.00%	571	5,987	40.00%	2,395	2,210	40.00%	884	1,738	low	0
NJ	PASSAIC	1,529	50.00%	765	3,244	50.00%	1,622	1,019	50.00%	510	1,298		0
NJ	SOMERSET	906	50.00%	453	4,060	50.00%	2,030	1,405	40.00%	562	1,136		0
NJ	SUSSEX	368	50.00%	184	4,514	50.00%	2,257	1,839	40.00%	736	978		0
NJ	UNION	1,965	50.00%	983	2,368	50.00%	1,184	655	50.00%	328	1,360		0
NJ	WARREN	221	50.00%	111	3,073	50.00%	1,537	1,229	40.00%	492	648		0
NJ	NJ STATE POLICE	1,467	50.00%	734			0			0			0
NJ	NJ DEPT. CORRECT.	3,147	50.00%	1,574			0			0			0
NJ	NJ OTHER POLICE	363	50.00%	182			0			0			0
NY	DUTCHESS	377	50.00%	189	7,248	50.00%	3,624	2,899	40.00%	1,160	1,457		0
NY	NASSAU	3,779	50.00%	1,890	6,749	7.00%	472	1,755	20.00%	351	2,953		0
NY	ORANGE	769	50.00%	385	8,079	50.00%	4,040	3,270	40.00%	1,308	1,803		0
NY	PUTNAM	99	50.00%	50	2,174	50.00%	1,087	889	40.00%	356	432		0
NY	ROCKLAND	594	50.00%	297	2,660	50.00%	1,330	887	40.00%	355	740		0
NY	SUFFOLK	3,289	30.00%	987	14,204	7.00%	994	4,486	20.00%	897	3,981		0

	County / Agency	POLICE 2010	TRNS/ PRC PEN %	PERSNL PEN	FIRE 2010	TRNS/ PRC PEN %	PERSNL PEN	EMS 2010	TRNS/ PRC PEN %	PERSNL PEN	GOV SVCS 2010	TRNS/ PRC PEN %	PERSNL PEN
NY	SULLIVAN	79	50.00%	40	4,740	50.00%	2,370	2,370	40.00%	948	928		0
NY	ULSTER	354	50.00%	177	7,084	50.00%	3,542	3,542	40.00%	1,417	1,505		0
NY	WESTCHESTER	2,514	50.00%	1,257	7,182	7.00%	503	898	20.00%	180	2,267		0
NY	NY STATE POLICE	877	50.00%	439			0			0			0
NY	NY OTHER POLICE	250	50.00%	125			0			0			0
NY	NEW YORK CITY	37,562	12.50%	4,695	13,132	12.50%	1,642	3,054	25.00%	764	148,523	10.00%	14,852
	BRONX			0			0			0			0
	KINGS			0			0			0			0
	NEW YORK			0			0			0			0
	QUEENS			0			0			0			0
	RICHMOND			0			0			0			0
NY	METRO TRANSIT AUTH			0			0			0	48,861	43.00%	21,010
	METRO NORTH RR	200	43.00%	86			0			0	5,344	43.00%	2,298
	PORT AUTH NY NJ	700	50.00%	350			0			0			0
	LONG ISLAND RR	250	43.00%	108			0			0	1,950	43.00%	839
	NJ TRANSIT	150	43.00%	65			0			0	3,700	43.00%	1,591
	TOTALS	83,229		26,006	153,321		48,260	51,909		17,755	251,138		40,590
	PENETR. BY CATEGORY	31.25%			31.48%			34.20%			16.16%		

PENETRATION DATA - FACSIMILE

	County / Agency	POLICE 2010	FAX PEN %	PERSNL PEN	FIRE 2010	FAX PEN %	PERSNL PEN	EMS 2010	FAX PEN %	PERSNL PEN	GOV SVCS 2010	FAX PEN %	PERSNL PEN
CT	FAIRFIELD	2,719	10.00%	272	9,063	7.00%	634	3,172	20.00%	634	2,889		0
CT	LITCHFIELD	360	1.00%	4	6,983	20.00%	1,397	3,174	10.00%	317	1,449		0
CT	MIDDLESEX	312	1.00%	3	3,434	20.00%	687	1,405	10.00%	141	761		0
CT	NEW HAVEN	2,573	10.00%	257	8,575	7.00%	600	2,744	20.00%	549	2,701		0
NJ	BERGEN	2,743	20.00%	549	4,972	low	0	1,543	20.00%	309	2,186	low	0
NJ	ESSEX	3,364	5.00%	168	3,130	5.00%	157	861	10.00%	86	2,181		0
NJ	HUDSON	2,389	5.00%	119	1,409	5.00%	70	368	10.00%	37	1,416		0
NJ	HUNTERDON	249	1.00%	2	3,660	20.00%	732	1,610	10.00%	161	783		0
NJ	MERCER	1,226	10.00%	123	3,448	7.00%	241	1,149	20.00%	230	1,188		0
NJ	MIDDLESEX	2,153	20.00%	431	5,583	low	0	1,834	20.00%	367	2,004	low	0
NJ	MONMOUTH	1,904	20.00%	381	6,566	low	0	1,642	20.00%	328	1,978	low	0
NJ	MORRIS	1,428	20.00%	286	5,987	low	0	2,210	20.00%	442	1,738	low	0
NJ	PASSAIC	1,529	5.00%	76	3,244	5.00%	162	1,019	10.00%	102	1,298		0
NJ	SOMERSET	906	1.00%	9	4,060	20.00%	812	1,405	10.00%	141	1,136		0
NJ	SUSSEX	368	1.00%	4	4,514	20.00%	903	1,839	10.00%	184	978		0
NJ	UNION	1,965	5.00%	98	2,368	5.00%	118	655	10.00%	66	1,360		0
NJ	WARREN	221	1.00%	2	3,073	20.00%	615	1,229	10.00%	123	648		0
NJ	NJ STATE POLICE	1,467	1.00%	15			0			0			0
NJ	NJ DEPT. CORRECT.	3,147	1.00%	31			0			0			0
NJ	NJ OTHER POLICE	363	1.00%	4			0			0			0
NY	DUTCHESS	377	1.00%	4	7,248	20.00%	1,450	2,899	10.00%	290	1,457		0
NY	NASSAU	3,779	10.00%	378	6,749	7.00%	472	1,755	20.00%	351	2,953		0
NY	ORANGE	769	1.00%	8	8,079	20.00%	1,616	3,270	10.00%	327	1,803		0
NY	PUTNAM	99	1.00%	1	2,174	20.00%	435	889	10.00%	89	432		0

	County / Agency	POLICE 2010	FAX PEN %	PERSNL PEN	FIRE 2010	FAX PEN %	PERSNL PEN	EMS 2010	FAX PEN %	PERSNL PEN	GOV SVCS 2010	FAX PEN %	PERSNL PEN
NY	ROCKLAND	594	1.00%	6	2,660	20.00%	532	887	10.00%	89	740		0
NY	SUFFOLK	3,289	5.00%	164	14,204	7.00%	994	4,486	20.00%	897	3,981		0
NY	SULLIVAN	79	1.00%	1	4,740	20.00%	948	2,370	10.00%	237	928		0
NY	ULSTER	354	1.00%	4	7,084	20.00%	1,417	3,542	10.00%	354	1,505		0
NY	WEST-CHESTER	2,514	10.00%	251	7,182	7.00%	503	898	20.00%	180	2,267		0
NY	NY STATE POLICE	877	1.00%	9			0			0			0
NY	NY OTHER POLICE	250	1.00%	3			0			0			0
NY	NEW YORK CITY	37,562	5.00%	1,878	13,132	5.00%	657	3,054	10.00%	305	148,523	low	0
	BRONX			0			0			0			0
	KINGS			0			0			0			0
	NEW YORK			0			0			0			0
	QUEENS			0			0			0			0
	RICHMOND			0			0			0			0
NY	METRO TRANSIT AUTH			0			0			0	48,861	low	0
	METRO NORTH RR	200	1.00%	2			0			0	5,344	low	0
	PORT AUTH NY NJ	700	5.00%	35			0			0			0
	LONG ISLAND RR	250	1.00%	3			0			0	1,950	low	0
	NJ TRANSIT	150	1.00%	2			0			0	3,700	low	0
	TOTALS	83,229		5,581	153,321		16,151	51,909		7,334	251,138		0
	PENETR. BY CATEGORY	6.71%			10.53%			14.13%			0.00%		

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PENETRATION DATA - SNAP SHOT (VISUAL IMAGE)

	County / Agency	POLICE 2010	SNP SHOT PEN %	PERSNL PEN	FIRE 2010	SNP SHOT PEN %	PERSNL PEN	EMS 2010	SNP SHOT PEN %	PERSNL PEN	GOV SVCS 2010	SNP SHOT PEN %	PERSNL PEN
CT	FAIRFIELD	2,719	25.00%	680	9,063	3.00%	272	3,172	10.00%	317	2,889		0
CT	LITCHFIELD	360	50.00%	180	6,983	10.00%	698	3,174	40.00%	1,270	1,449		0
CT	MIDDLESEX	312	50.00%	156	3,434	10.00%	343	1,405	40.00%	562	761		0
CT	NEW HAVEN	2,573	25.00%	643	8,575	3.00%	257	2,744	10.00%	274	2,701		0
NJ	BERGEN	2,743	40.00%	1,097	4,972	40.00%	1,989	1,543	40.00%	617	2,186	very low	0
NJ	ESSEX	3,364	25.00%	841	3,130	40.00%	1,252	861	33.00%	284	2,181		0
NJ	HUDSON	2,389	25.00%	597	1,409	40.00%	564	368	33.00%	121	1,416		0
NJ	HUNTERDON	249	50.00%	125	3,660	10.00%	366	1,610	40.00%	644	783		0
NJ	MERCER	1,226	25.00%	307	3,448	3.00%	103	1,149	10.00%	115	1,188		0
NJ	MIDDLESEX	2,153	40.00%	861	5,583	40.00%	2,233	1,834	40.00%	734	2,004	very low	0
NJ	MONMOUTH	1,904	40.00%	762	6,566	40.00%	2,626	1,642	40.00%	657	1,978	very low	0
NJ	MORRIS	1,428	40.00%	571	5,987	40.00%	2,395	2,210	40.00%	884	1,738		0
NJ	PASSAIC	1,529	25.00%	382	3,244	40.00%	1,298	1,019	33.00%	336	1,298		0
NJ	SOMERSET	906	50.00%	453	4,060	10.00%	406	1,405	40.00%	562	1,136		0
NJ	SUSSEX	368	50.00%	184	4,514	10.00%	451	1,839	40.00%	736	978		0
NJ	UNION	1,965	25.00%	491	2,368	40.00%	947	655	33.00%	216	1,360		0
NJ	WARREN	221	50.00%	111	3,073	10.00%	307	1,229	40.00%	492	648		0
NJ	NJ STATE POLICE	1,467	50.00%	734			0			0			0
NJ	NJ DEPT. CORRECT.	3,147	50.00%	1,574			0			0			0
NJ	NJ OTHER POLICE	363	50.00%	182			0			0			0
NY	DUTCHESS	377	50.00%	189	7,248	10.00%	725	2,899	40.00%	1,160	1,457		0
NY	NASSAU	3,779	25.00%	945	6,749	3.00%	202	1,755	10.00%	176	2,953		0
NY	ORANGE	769	50.00%	385	8,079	10.00%	808	3,270	40.00%	1,308	1,803		0
NY	PUTNAM	99	50.00%	50	2,174	10.00%	217	889	40.00%	356	432		0

	County / Agency	POLICE 2010	SNP SHOT PEN %	PERSNL PEN	FIRE 2010	SNP SHOT PEN %	PERSNL PEN	EMS 2010	SNP SHOT PEN %	PERSNL PEN	GOV SVCS 2010	SNP SHOT PEN %	PERSNL PEN
NY	ROCKLAND	594	50.00%	297	2,660	10.00%	266	887	40.00%	355	740		0
NY	SUFFOLK	3,289	5.00%	164	14,204	3.00%	426	4,486	10.00%	449	3,981		0
NY	SULLIVAN	79	50.00%	40	4,740	10.00%	474	2,370	40.00%	948	928		0
NY	ULSTER	354	50.00%	177	7,084	10.00%	708	3,542	40.00%	1,417	1,505		0
NY	WEST-CHESTER	2,514	25.00%	629	7,182	3.00%	215	898	10.00%	90	2,267		0
NY	NY STATE POLICE	877	50.00%	439			0			0			0
NY	NY OTHER POLICE	250	50.00%	125			0			0			0
NY	NEW YORK CITY	37,562	25.00%	9,391	13,132	40.00%	5,253	3,054	33.00%	1,008	148,523	0.50%	743
	BRONX			0			0			0			0
	KINGS			0			0			0			0
	NEW YORK			0			0			0			0
	QUEENS			0			0			0			0
	RICHMOND			0			0			0			0
NY	METRO TRANSIT AUTH			0			0			0	48,861	2.00%	977
	METRO NORTH RR	200	5.00%	10			0			0	5,344	0.50%	27
	PORT AUTH NY NJ	700	25.00%	175			0			0			0
	LONG ISLAND RR	250	5.00%	13			0			0	1,950	0.50%	10
	NJ TRANSIT	150	5.00%	8			0			0	3,700	0.50%	19
	TOTALS	83,229		23,962	153,321		25,804	51,909		16,085	251,138		1,775
	PENETR. BY CATEGORY	28.79%			16.83%			30.99%			0.71%		

PENETRATION DATA - REMOTE FILE ACCESS/DECISION PROCESSING

	County / Agency	POLICE 2010	RFA/ DECP PEN %	PERSNL PEN	FIRE 2010	RFA/ DECP PEN %	PERSNL PEN	EMS 2010	RFA/ DECP PEN %	PERSNL PEN	GOV SVCS 2010	RFA/ DECP PEN %	PERSNL PEN
CT	FAIRFIELD	2,719	25.00%	680	9,063	3.00%	272	3,172	10.00%	317	2,889		0
CT	LITCHFIELD	360	40.00%	144	6,983	40.00%	2,793	3,174	40.00%	1,270	1,449		0
CT	MIDDLESEX	312	40.00%	125	3,434	40.00%	1,374	1,405	40.00%	562	761		0
CT	NEW HAVEN	2,573	25.00%	643	8,575	3.00%	257	2,744	10.00%	274	2,701		0
NJ	BERGEN	2,743	very low	0	4,972	40.00%	1,989	1,543	40.00%	617	2,186	very low	0
NJ	ESSEX	3,364	25.00%	841	3,130	40.00%	1,252	861	33.00%	284	2,181		0
NJ	HUDSON	2,389	25.00%	597	1,409	40.00%	564	368	33.00%	121	1,416		0
NJ	HUNTERDON	249	40.00%	100	3,660	40.00%	1,464	1,610	40.00%	644	783		0
NJ	MERCER	1,226	25.00%	307	3,448	3.00%	103	1,149	10.00%	115	1,188		0
NJ	MIDDLESEX	2,153	very low	0	5,583	40.00%	2,233	1,834	40.00%	734	2,004	very low	0
NJ	MONMOUTH	1,904	very low	0	6,566	40.00%	2,626	1,642	40.00%	657	1,978	very low	0
NJ	MORRIS	1,428	very low	0	5,987	40.00%	2,395	2,210	40.00%	884	1,738	very low	0
NJ	PASSAIC	1,529	25.00%	382	3,244	40.00%	1,298	1,019	33.00%	336	1,298		0
NJ	SOMERSET	906	40.00%	362	4,060	40.00%	1,624	1,405	40.00%	562	1,136		0
NJ	SUSSEX	368	40.00%	147	4,514	40.00%	1,806	1,839	40.00%	736	978		0
NJ	UNION	1,965	25.00%	491	2,368	40.00%	947	655	33.00%	216	1,360		0
NJ	WARREN	221	40.00%	88	3,073	40.00%	1,229	1,229	40.00%	492	648		0
NJ	NJ STATE POLICE	1,467	40.00%	587			0			0			0
NJ	NJ DEPT. CORRECT.	3,147	40.00%	1,259			0			0			0
NJ	NJ OTHER POLICE	363	40.00%	145			0			0			0
NY	DUTCHESS	377	40.00%	151	7,248	40.00%	2,899	2,899	40.00%	1,160	1,457		0
NY	NASSAU	3,779	25.00%	945	6,749	3.00%	202	1,755	10.00%	176	2,953		0
NY	ORANGE	769	40.00%	308	8,079	40.00%	3,232	3,270	40.00%	1,308	1,803		0
NY	PUTNAM	99	40.00%	40	2,174	40.00%	870	889	40.00%	356	432		0

	County / Agency	POLICE 2010	RFA/ DECP PEN %	PERSNL PEN	FIRE 2010	RFA/ DECP PEN %	PERSNL PEN	EMS 2010	RFA/ DECP PEN %	PERSNL PEN	GOV SVCS 2010	RFA/ DECP PEN %	PERSNL PEN
NY	ROCKLAND	594	40.00%	238	2,660	40.00%	1,064	887	40.00%	355	740		0
NY	SUFFOLK	3,289	1.00%	33	14,204	3.00%	426	4,486	10.00%	449	3,981		0
NY	SULLIVAN	79	40.00%	32	4,740	40.00%	1,896	2,370	40.00%	948	928		0
NY	ULSTER	354	40.00%	142	7,084	40.00%	2,834	3,542	40.00%	1,417	1,505		0
NY	WEST-CHESTER	2,514	25.00%	629	7,182	3.00%	215	898	10.00%	90	2,267		0
NY	NY STATE POLICE	877	40.00%	351			0			0			0
NY	NY OTHER POLICE	250	40.00%	100			0			0			0
NY	NEW YORK CITY	37,562	25.00%	9,391	13,132	40.00%	5,253	3,054	33.00%	1,008	148,523	1.50%	2,228
	BRONX			0			0			0			0
	KINGS			0			0			0			0
	NEW YORK			0			0			0			0
	QUEENS			0			0			0			0
	RICHMOND			0			0			0			0
NY	METRO TRANSIT AUTH			0			0			0	48,861	0.05%	24
	METRO NORTH RR	200	very low	0			0			0	5,344	0.30%	16
	PORT AUTH NY NJ	700	25.00%	175			0			0			0
	LONG ISLAND RR	250	very low	0			0			0	1,950	0.30%	6
	NJ TRANSIT	150	very low	0			0			0	3,700	0.05%	2
	TOTALS	83,229		19,430	153,321		43,117	51,909		16,085	251,138		2,276
	PENETR. BY CATEGORY	23.34%			28.12%			30.99%			0.91%		

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PENETRATION DATA - SLOW SCAN VIDEO

	County / Agency	POLICE 2010	VIDEO-SS PEN %	PERSNL PEN	FIRE 2010	VIDEO-SS PEN %	PERSNL PEN	EMS 2010	VIDEO-SS PEN %	PERSNL PEN	GOV SVCS 2010	VIDEO-SS PEN %	PERSNL PEN
CT	FAIRFIELD	2,719	10.00%	272	9,063	3.00%	272	3,172	10.00%	317	2,889		0
CT	LITCHFIELD	360		0	6,983		0	3,174	10.00%	317	1,449		0
CT	MIDDLESEX	312		0	3,434		0	1,405	10.00%	141	761		0
CT	NEW HAVEN	2,573	10.00%	257	8,575	3.00%	257	2,744	10.00%	274	2,701		0
NJ	BERGEN	2,743	low	0	4,972	low	0	1,543	40.00%	617	2,186	0.00%	0
NJ	ESSEX	3,364	0.50%	17	3,130	0.50%	16	861	5.00%	43	2,181		0
NJ	HUDSON	2,389	0.50%	12	1,409	0.50%	7	368	5.00%	18	1,416		0
NJ	HUNTERDON	249		0	3,660		0	1,610	10.00%	161	783		0
NJ	MERCER	1,226	10.00%	123	3,448	3.00%	103	1,149	10.00%	115	1,188	0.00%	0
NJ	MIDDLESEX	2,153	low	0	5,583	low	0	1,834	40.00%	734	2,004	0.00%	0
NJ	MONMOUTH	1,904	low	0	6,566	low	0	1,642	40.00%	657	1,978	0.00%	0
NJ	MORRIS	1,428	low	0	5,987	low	0	2,210	40.00%	884	1,738		0
NJ	PASSAIC	1,529	0.50%	8	3,244	0.50%	16	1,019	5.00%	51	1,298		0
NJ	SOMERSET	906		0	4,060		0	1,405	10.00%	141	1,136		0
NJ	SUSSEX	368		0	4,514		0	1,839	10.00%	184	978		0
NJ	UNION	1,965	0.50%	10	2,368	0.50%	12	655	5.00%	33	1,360		0
NJ	WARREN	221		0	3,073		0	1,229	10.00%	123	648		0
NJ	NJ STATE POLICE	1,467		0			0			0			0
NJ	NJ DEPT. CORRECT.	3,147		0			0			0			0
NJ	NJ OTHER POLICE	363		0			0			0			0
NY	DUTCHESS	377		0	7,248		0	2,899	10.00%	290	1,457		0
NY	NASSAU	3,779	10.00%	378	6,749	3.00%	202	1,755	10.00%	176	2,953		0
NY	ORANGE	769		0	8,079		0	3,270	10.00%	327	1,803		0
NY	PUTNAM	99		0	2,174		0	889	10.00%	89	432		0

	County / Agency	POLICE 2010	VIDEO-SS PEN %	PERSNL PEN	FIRE 2010	VIDEO-SS PEN %	PERSNL PEN	EMS 2010	VIDEO-SS PEN %	PERSNL PEN	GOV SVCS 2010	VIDEO-SS PEN %	PERSNL PEN
NY	ROCKLAND	594		0	2,660		0	887	10.00%	89	740		0
NY	SUFFOLK	3,289	1.00%	33	14,204	3.00%	426	4,486	10.00%	449	3,981		0
NY	SULLIVAN	79		0	4,740		0	2,370	10.00%	237	928		0
NY	ULSTER	354		0	7,084		0	3,542	10.00%	354	1,505		0
NY	WEST-CHESTER	2,514	10.00%	251	7,182	3.00%	215	898	10.00%	90	2,267		0
NY	NY STATE POLICE	877		0			0			0			0
NY	NY OTHER POLICE	250		0			0			0			0
NY	NEW YORK CITY	37,562	0.50%	188	13,132	0.50%	66	3,054	5.00%	153	148,523	4.00%	5,941
	BRONX			0			0			0			0
	KINGS			0			0			0			0
	NEW YORK			0			0			0			0
	QUEENS			0			0			0			0
	RICHMOND			0			0			0			0
NY	METRO TRANSITAUTH			0			0			0	48,861	0.75%	366
	METRO NORTH RR	200	0.75%	2			0			0	5,344	0.75%	40
	PORT AUTH NY NJ	700	0.50%	4			0			0			0
	LONG ISLAND RR	250	0.75%	2			0			0	1,950	0.75%	15
	NJ TRANSIT	150	0.75%	1			0			0	3,700	0.75%	28
	TOTALS	83,229		1,556	153,321		1,593	51,909		7,062	251,138		6,390
	PENETR. BY CATEGORY	1.87%			1.04%			13.60%			2.54%		

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PENETRATION DATA - FULL MOTION VIDEO

	County / Agency	POLICE 2010	VIDO-FLM PEN %	PERSNL PEN	FIRE 2010	VIDO-FLM PEN %	PERSNL PEN	EMS 2010	VIDO-FLM PEN %	PERSNL PEN	GOV SVCS 2010	VIDO-FLM PEN %	PERSNL PEN
CT	FAIRFIELD	2,719	12.50%	340	9,063	1.00%	91	3,172	0.05%	2	2,889		0
CT	LITCHFIELD	360	5.00%	18	6,983	30.00%	2,095	3,174	5.00%	159	1,449		0
CT	MIDDLESEX	312	5.00%	16	3,434	30.00%	1,030	1,405	5.00%	70	761		0
CT	NEW HAVEN	2,573	12.50%	322	8,575	1.00%	86	2,744	0.05%	1	2,701		0
NJ	BERGEN	2,743	25.00%	686	4,972	40.00%	1,989	1,543	low	0	2,186	0.00%	0
NJ	ESSEX	3,364	12.50%	421	3,130	12.50%	391	861	10.00%	86	2,181		0
NJ	HUDSON	2,389	12.50%	299	1,409	12.50%	176	368	10.00%	37	1,416		0
NJ	HUNTERDON	249	5.00%	12	3,660	30.00%	1,098	1,610	5.00%	81	783		0
NJ	MERCER	1,226	12.50%	153	3,448	1.00%	34	1,149	0.05%	1	1,188		0
NJ	MIDDLESEX	2,153	25.00%	538	5,583	40.00%	2,233	1,834	low	0	2,004		0
NJ	MONMOUTH	1,904	25.00%	476	6,566	40.00%	2,626	1,642	low	0	1,978	0.00%	0
NJ	MORRIS	1,428	25.00%	357	5,987	40.00%	2,395	2,210	low	0	1,738	0.00%	0
NJ	PASSAIC	1,529	12.50%	191	3,244	12.50%	406	1,019	10.00%	102	1,298	0.00%	0
NJ	SOMERSET	906	5.00%	45	4,060	30.00%	1,218	1,405	5.00%	70	1,136		0
NJ	SUSSEX	368	5.00%	18	4,514	30.00%	1,354	1,839	5.00%	92	978		0
NJ	UNION	1,965	12.50%	246	2,368	12.50%	296	655	10.00%	66	1,360		0
NJ	WARREN	221	5.00%	11	3,073	30.00%	922	1,229	5.00%	61	648		0
NJ	NJ STATE POLICE	1,467	5.00%	73			0			0			0
NJ	NJ DEPT. CORRECT.	3,147	5.00%	157			0			0			0
NJ	NJ OTHER POLICE	363	5.00%	18			0			0			0
NY	DUTCHESS	377	5.00%	19	7,248	30.00%	2,174	2,899	5.00%	145	1,457		0
NY	NASSAU	3,779	12.50%	472	6,749	1.00%	67	1,755	0.05%	1	2,953		0
NY	ORANGE	769	5.00%	38	8,079	30.00%	2,424	3,270	5.00%	164	1,803		0
NY	PUTNAM	99	5.00%	5	2,174	30.00%	652	889	5.00%	44	432		0
NY	ROCKLAND	594	5.00%	30	2,660	30.00%	798	887	5.00%	44	740		0
NY	SUFFOLK	3,289	1.00%	33	14,204	1.00%	142	4,486	0.05%	2	3,981		0

	County / Agency	POLICE 2010	VIDO-FLM PEN %	PERSNL PEN	FIRE 2010	VIDO-FLM PEN %	PERSNL PEN	EMS 2010	VIDO-FLM PEN %	PERSNL PEN	GOV SVCS 2010	VIDO-FLM PEN %	PERSNL PEN
NY	SULLIVAN	79	5.00%	4	4,740	30.00%	1,422	2,370	5.00%	119	928		0
NY	ULSTER	354	5.00%	18	7,084	30.00%	2,125	3,542	5.00%	177	1,505		0
NY	WEST-CHESTER	2,514	12.50%	314	7,182	1.00%	72	898	0.05%	0	2,267		0
NY	NY STATE POLICE	877	5.00%	44			0			0			0
NY	NY OTHER POLICE	250	5.00%	13			0			0			0
NY	NEW YORK CITY	37,562	12.50%	4,695	13,132	12.50%	1,642	3,054	10.00%	305	148,523	0.60%	891
	BRONX			0			0			0			0
	KINGS			0			0			0			0
	NEW YORK			0			0			0			0
	QUEENS			0			0			0			0
	RICHMOND			0			0			0			0
NY	METRO TRANSIT AUTH			0			0			0	48,861	1.00%	489
	METRO NORTH RR	200	5.00%	10			0			0	5,344	1.00%	53
	PORT AUTH NY NJ	700	12.50%	88			0			0			0
	LONG ISLAND RR	250	4.00%	10			0			0	1,950	1.00%	20
	NJ TRANSIT	150	1.00%	2			0			0	3,700	1.00%	37
	TOTALS	83,229		10,191	153,321		29,958	51,909		1,829	251,138		1,490
	PENETR. BY CATEGORY	12.24%			19.54%			3.52%			0.59%		

1. U.S. Bureau of the Census. *County and City Data Book: 1994*.
2. Prepared by Urbanomics, a consulting firm, for the New York Metropolitan Transportation Council, a planning organization of New York State government. The chart was last revised on 9/18/95.
3. New York State, Division of Criminal Justice Services, *1993 Crime and Justice Annual Report*.
4. State of New Jersey, Division of State Police, *Uniform Crime Reports, State of New Jersey, 1993*.
5. *Fire and EMS Data Book* is a compilation of detailed information on the resources available in the county of Nassau. The data included information on the number of personnel in each category.
6. *The 1994-95 Green Book* is an official directory of the City of New York.
7. Taken from *New York City Transit's Facts & Figures: 1995* booklet. Commodity Number 22-30-0202, Log Number 1095038, Printed 5/95.